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Mark Alexander Lever – *Curriculum Vitae*

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Research Interests

My research is driven by my interest in the role of microorganisms in Earth's carbon cycle. I pursue research questions of broad significance concerning the mechanistic (*how?*) and quantitative (*how much?*) influence of microorganisms on the short- and long-term fate of organic carbon in aquatic sediments and the Earth's crust. This includes the effects of anthropogenic activity on short- and long-term carbon-cycling processes.

Education

Dec 2008	PhD in Marine Sciences, Dept. of Marine Sciences, Univ. of North Carolina at Chapel Hill, USA.
August 2002	Master of Arts in Marine Biology, Boston University Marine Program, Woods Hole, USA.
August 1999	Bachelor of Arts in Biology with Minor in Music, Boston University, Boston, USA.

Institutional appointments

Aug 2022 – present	Associate Professor of Marine Biogeochemistry and Geobiology, Univ. Texas Austin.
Aug 2014 – present	Adjunct Professor, Center for Geomicrobiology, Aarhus University, Denmark.
Aug 2014 – July 2022	Assistant Professor of Environmental Microbiology, ETH Zurich.
Jan 2013 – July 2014	Scientist, Center for Geomicrobiology, Aarhus University, Denmark.
Jan 2011 – Dec 2012	Marie-Curie Intra-European Postdoctoral Fellow (SUBSTRATE USE), Center for Geomicrobiology, Aarhus University, Denmark.
Jan 2009 – Dec 2010	Postdoctoral Scientist, Center for Geomicrobiology, Aarhus University, Denmark.
Aug 2002 – Dec 2008	Research Asst, Dept. of Marine Sci, Univ. of North Carolina at Chapel Hill, USA.

Professional Societies

Memberships in Geochemical Society, International Society for Environmental Biogeochemistry, American Society of Microbiology, American Geophysical Union, Japan Society to Promote Science, and American Society of Limnology & Oceanography.

Honors and awards

2025	'Outstanding Editor Award' at Biogeosciences.
2018, 2024	Whiteley Fellow, Friday Harbor Laboratories, University of Washington, USA.
2021, 2023	'Outstanding Associate Editor' at Frontiers in Microbiology.
2022	'Outstanding Review Editor' at Frontiers in Microbiology.
2016 – 2017	Distinguished Lecturer, European Consortium for Ocean Research Drilling.
2017	Nominee, ETH Zurich Latsis Prize.
2015	'Outstanding Reviewer' at Estuarine, Coastal and Shelf Sciences.
2011 – 2012	Marie Curie Intra-European Postdoctoral Fellowship.
Aug 2007 – May 2008	Univ. of North Carolina at Chapel Hill – Dissertation Completion Fellowship.
June-August 2007	NSF-East Asia and Pacific Summer Institute fellowship.
2006-2007	Schlanger Ocean Drilling Fellowship, IODP, U.S. Science Support Program, NSF.
June-July 2003	NSF Scholarship, Microbial Diversity course, MBL, Woods Hole, MA.
2001-2002	Fellow, Sounds Conservancy, Québec-Labrador Foundation.

Third-party funding

Research grants *(attained as PI or part of group of PIs)*

Active

2025-2027	Texas Gulf Coast Research Center (TGCRC; Impact-25-M.Lever), "Hydrological and geochemical exchanges between bays and the coastal Gulf across Aransas Pass – a historical record related to human activities over the past century" (PI: Mark A. Lever).	$150,000
2025-2026	Coastal Bend Bays and Estuaries Program, Habitat and Living Resources Division, "Carbon stocks and fluxes in black mangrove communities of the Coastal Bend" (PI: Loretta Battaglia; Co-PIs: Mark A. Lever, Kam Tang; total requested funds: $99,964).	$50,000
2025-2027	CNS Catalyst Grant, College of Natural Sciences, UT Austin "Combining seismic profiling and deep sediment coring to map the distributions of shallow-water methane seeps and sources", (PI: Mark A. Lever, Co-PIs: John A. Goff, Sean P. S. Gulick; Institute of Geophysics, UT Austin).	$100,000
2025-2027	CNS Spark Grant Program, College of Natural Sciences, UT Austin, "Development and implementation of Single-Particle Raman-Assisted Metagenomics (SPRAM) to illuminate elemental cycles in Earth's biggest organic carbon sink" (PI: Mark A. Lever).	$200,000
2025-2026	Environmental Molecular Sciences Laboratory, Molecular Observation. Network, "Salt marsh soil biogeochemistry across belowground productivity gradient" (PI: Kyle D. Runion; Co-PI: Mark A. Lever).	*soil metagenome & geochemical analyses*
2025-2026	King County, WA (Quartermaster Harbor), "Analysis of sedimentary DNA (sedaDNA) records to reconstruct drivers of organismal community structure over the past century" (PI: M.A. Lever).	$80,190
2023-2026	National Aeronautics and Space Administration (NASA), Future Investigators in NASA Earth and Space Science and Technology (FINESST), BERM, a geospatial informatics approach for estimating coastal marsh blue carbon and vulnerability to sea level rise (Fellow: Kyle D. Runion PI: Mark A. Lever).	$150,000
2023-2025	Texas Gulf Coast Research Center (TGCRC; Impact-23-M.Lever), "Seaweed farming as the basis for a new green economy in Texas intra-coastal waters - a pilot study" (PI: Mark A. Lever; Co-PI: Ning Lin: UT Austin's Bureau of Economic Geology).	$250,000
2023-2025	Aarhus University Research Foundation, "Is there methane production in the sea ice of the Arctic Ocean?" (*PIs: Lars C. Lund-Hansen, Mark Lever, Nils Risgaard-Petersen, Søren Rysgaard, Dorte Haubjerg Søgaard, Brian Sorrell*).	56,800 €
2023-2025	International Center for Deep Life Investigation (IC-DLI), "Role of deep oceanic crustal or mantle-derived energy sources in supporting microbial communities of diffuse seepage areas in the deep sea" (PI: Mark A. Lever).	100,000 RMB (~ $20,000)
2022-2025	NOAA, Margaret A. Davidson Fellowship, "Assessing tidal salt marsh resilience to global change as a consequence of water quality mediated belowground plant productivity (MANERR)" (Fellow: Kyle D. Runion; PI: Mark A. Lever).	$102,436

Past

2022-2023	General Land Office (GLO; contract # 22-113-024-D388), "Analysis of sediment transport in the Nueces and Corpus Christi Bays" (PI: Amir Hessami (Texas A&M Kingsville), Co-PI: Edward Buskey; I was the Co-Investigator who administered the funds and coordinated the field sampling and laboratory analyses for the project.	$40,402
2019-2022	Swiss National Science Foundation, "Microbial cycling of sulfurized organic matter in freshwater sediments" (*PI: Mark A. Lever).*	CHF 317,870
2019-2022*	ETH Zurich, ETH Zurich Research Grant, "The Semi-Liquid Ocean Bottom (SLOB) Hypothesis" (*Pis: Timothy I. Eglinton, Mark A. Lever*).	CHF 239,800
2019-2022	ETH Zurich, ETH Zurich Research Grant, "Controls on microbial chitin turnover in sediments" (*PI: Mark A. Lever*).	CHF 231,400
2018-2022	Swiss National Science Foundation, Synergia Proposal "Elucidating the success of microbial biofilms and their implications for habitability and ecosystem evolution in glacial floodplain streams (ENSEMBLE)" (*Pis: Tom Ian Battin (corresponding); Stuart Lane (Univ. Of Lausanne), Paul Wilmes (Univ. Of Luxemburg), and Mark A. Lever* (18% of budget)).	CHF 2,309,993
2018-2022	Swiss Commission for Technology and Innovation (CTI), "Process innovation in the growth of fish/salmon in recirculating aquaculture systems" (*PI: Fridolin Tschudi; Co-Pis: Mark A. Lever, Rudolf Ryf, Mathias Sigrist*).	CHF 541,969
2015-2020	Swiss National Science Foundation, "Role of bioturbation in controlling microbial community composition and biogeochemical cycles in marine and lacustrine sediment" (*PI: Mark A. Lever*).	CHF 438,000
2016-2018	Swiss National Science Foundation, "Composition, sources, and preservation of carbohydrates in marine and lacustrine sediments" (*PI: Mark A. Lever*).	CHF 237,000
2014-2015	Aarhus University Research Foundation, "Methane cycling in marine surface sediment: an ignored process of potential global importance" (*PI: Nils Risgaard-Petersen; Co-Pis: Clemens Glombitza, Mark A. Lever, Hans Røy*).	27,000 €
2013	Sloan Foundation, Deep Carbon Observatory, Census of Deep Life, "Supplemental sequencing request associated with Census of Deep Life Project" (*PI: Beth Orcutt; Co-Pis Paul Baquiran, Katrina J. Edwards, Mark A. Lever, Brandi K. Reese*).	sequencing grant
2012-2013	Aarhus University Research Foundation, "Revealing the identity and function of carbon cycling microbes in the seabed by stable isotope probing- targeted metagenomics" (*Pis: Kasper U. Kjeldsen, Mark A. Lever*)	54,000 €
2012	Sloan Foundation, Deep Carbon Observatory, Census of Deep Life, "Investigating microbial community transitions at the sediment basement sediment basement interface" (*PI: Beth N. Orcutt; Co-PI: Katrina J. Edwards, Mark A. Lever*).	sequencing grant
2004-2005	IODP Expedition 301 Post-cruise Funding, U.S. Science Support Program, 2004 (*Pis Mark A. Lever and Andreas P. Teske*).	$23,663

Network grants

(for scientific networks that fund research, workshops, and membership in international programs)

2023-2032	"Global Subseafloor Ecosystem and Sustainability" (GSES), Call for Decade Actions, 2021-2030 United Nations Decade of Ocean Science for Sustainable Development. (*PI: Fengping Wang Shanghai Jiaotong University; Mark A. Lever is a collaborator).*	$20,000,000
2019-2023*	Swiss National Science Foundation, "SwissDrilling", Swiss participation in The International Ocean Discovery Program (IODP) through membership in the European Consortium for Ocean Research Drilling (ECORD)" (*PI: Flavio Anselmetti; Mark A. Lever is one of 5 Co-PIs, and drafted the final version with Heather Stoll (ETH Zurich))*.	CHF 3,794,655
2018-2019*	Sloan Foundation, Deep Carbon Observatory (DCO, Deep Life Renewal Grant (2018-19), grant to fund workshops, sequencing, publication, and outreach costs of DCO's Deep Life Community (*PIs Mitchell Sogin, Kai-Uwe Hinrichs; Mark A. Lever was a Co-PI and advisory board member and responsible for the Deep Life Modeling and Visualization initiative (12% of total budget))*.	$1,250,000
2017-2018*	Swiss National Science Foundation, "SwissDrilling", Swiss participation in the International Ocean Discovery Program (IODP) through membership in the European Consortium for Ocean Research Drilling (ECORD); enables Swiss scientists to participate in and lead IODP expeditions (*PI: Flavio Anselmetti; Mark A. Lever was one of 5 Co-PIs*).	CHF 1,511,877
2016-2017*	Sloan Foundation, Deep Carbon Observatory, Deep Life Grant (*Mark A. Lever was awarded this amount to lead the Deep Life Visualization and Modeling component of the Deep Life community together with Marshall Bowles and Everett Shock*).	$170,000
2015-2019*	European Cooperation in Science and Technology (COST) grant for project "Uncovering the Mediterranean salt giant (MEDSALT)" (*Pis Angelo Camerlenghi, Deniz Karaca; Mark A. Lever represented Switzerland as a Co-PI*).	
2013-2017	European Cooperation in Science and Technology (COST) grant for project "Impact of fluid circulation in old oceanic lithosphere on the seismicity of transform-type plate boundaries: new solutions for early seismic monitoring of major European seismogenic zones" (*Mark A. Lever was the Vice-Chair and represented Denmark as a Co-PI).*	

Expedition proposals

2022	International Continental Scientific Drilling Program proposal "Weihe Basin Drilling Project (WBDP): Cenozoic tectonic-monsoon interactions", ***proposal accepted***, expedition scheduling in progress (*PI: Youhong Sun; Co-Pis: Zhisheng An, Peter Molnar, Carmala Garzione, Mark A. Lever, Hendrik Vogel, Peizhen Zhang*; *Mark A. Lever leads the geomicrobiology component*).
2022	Cruise proposal for RV Meteor "Azores Hot Vents", cruise took place November 29-December 31, 2022 (*PI: Christopher Schmidt; Co-PIs: Christian Hensen, Mirjam Perner, Sylvia Sander, Rebecca Zitoun (all GEOMAR, D), Norbert Kaul (Bremen University, D), & Pedro Terrinha (Portuguese Institute of the Sea and Atmosphere, PT); Mark A. Lever was invited to join the geomicrobiology and biogeochemistry team).*
2020	Cruise proposal for RV Meteor "Exploring subsurface fluid flow and active dewatering along the oceanic plate boundary between Africa and Eurasia in the

Central North Atlantic (Gloria Fault), expedition took place from March 10-April 5, 2020 (*PIs: Christian Hensen, Pedro Terrinha, Joao Duarte, Norbert Kaul; Mark A. Lever was a co-proponent*).

2020 International Ocean Discovery Program expedition "Genesis of methane hydrate in coarse-grained systems: Northern Gulf of Mexico Slope", ***proposal accepted*** (IODP Proposal 887-CPP), ***expedition cancelled****; PI: Peter Flemings (UT Austin); Mark A. Lever was a Co-PI*).

2019-2020 Intercontinental Drilling Program proposal "Trans-Amazon Drilling Project" (***proposal accepted, expedition postponed****; PIs Paul Baker, Sherilyn Fritz, Cleverson Silva, Andrea Marzoli; Mark A. Lever was a co-proponent*).

Grants awarded to members of my group

2024-2026	Student-led proposal in planetary habitability, Center for Planetary Systems Habitability, UT Austin (*PI: John E. Hinkle; Mark A. Lever Is the supervisor*).	$20,000
2021-23	Marie Sklodowska-Curie Actions postdoctoral fellowship, « Dormant microbial communities reactivation dynamics in lake sediments » *(PI : Dimitri Meier; Mark A. Lever was the supervisor).*	CHF 191,149
2019-24	ERC Starting Grant (Horizon 2020, European Union), « Global measure of biodiversity by understanding biogeochemical cycling of environmental DNA in lakes (LeDNA) (*PI : Kristy Deiner ; Mark A. Lever was the host*).	1,500,000 €
2019-2023*	Chinese Scholarship Council *(PhD fellowship awarded to Jiaqi Li; Jiaqi Li joined Mark A. Lever's lab in September 2019).*	CHF 90,000
2019-2023*	Swiss National Science Foundation, PRIMA fellowship "What drives the distribution of chemical fossils? Influence of microbial community dynamics on bacterial membrane lipid signatures (MiCoDyLipids)". *PI: Cindy de Jonge, host: Timothy Eglinton; partners: Nathalie Dubois, Carsten Schubert (both Eawag) and Mark A. Lever; microbiology part in Mark A. Lever's group).*	CHF 750,000
2019*	Joint Genome Institute (JGI), Community Science Program "Genomic insights into microbial organic matter degradation in lacustrine sediments" (*awarded to Mark A. Lever's PhD student Xingguo Han*).	metagenome sequencing
2016-2020*	Chinese Scholarship Council *(PhD fellowship awarded to Xingguo Han; Xingguo Han joined Mark A. Lever's lab in October 2016).*	CHF 90,000
2017	Sloan Foundation, Deep Carbon Observatory, Census of Deep Life, "Influence of organic matter composition on microbial communities in Benguela upwelling system subsurface sediments characterized by metagenomics" *(awarded to Mark* A. *Lever's PhD student Lorenzo Lagostina)*.	metagenome sequencing
2015	European Cooperation in Science and Technology (COST), Short-term scientific mission (STSM) grant for visiting postdoc Vanessa Oliveira (University of Aveiro, PT).	2,500 €

Publications

- 95 published or accepted (13 as first, 32 as corresponding author).
- Google Scholar Metrics: 8,169 citations in total (h-index: 41, i10-index: 67).
- corresponding authorships are marked by asterisks.
- students or postdocs who I mentored on the study are underlined.

96. Li D, Guo Q, Xu H, Liu X, Xue Y-R, Huang X, Duan N, Shan C, Hua M, Yu X, **Lever MA**, Hinrichs K-U, Inagaki F, Pan B, Liu C, Dissimilatory sulfate reduction by a eukaryote, *Nature, submitted*.

95. **Lever MA**, Alperin MJ, Morono Y, Inagaki F, Teske AP, Distribution of methane-cycling archaea in buried ridge flank sediment: community zonation, activity and potential environmental drivers, *Frontiers Microbiol., in press*.

94. Ajallooeian F, Dubois N, Eglinton TI, Ladd SN, Schubert CJ, **Lever MA**, de Jonge C, Controls on brGDGT distributions in the suspended particulate matter of the seasonally anoxic water column of Rotsee, *JGR Biogeosciences, accepted.*

93. Berg JS, Rodriguez PC, Magnabosco C, Deng L, Bernasconi S, Vogel H, Morlock M, **Lever MA** (2025) Active microbial sulfur cycling in 13,500-year-old lake sediments. *Biogeosciences* 22:5483-5496.

92. Su G, Tolu J, Glombitza C, Zopfi J, Lehmann MF, **Lever MA**, Schubert CJ (2025) Methane production during early diagenesis of sedimentary organic matter in lake sediments. *Biogeosciences* 22:4449–4466.

91. Runion KD, Alber M, Mishra DR, **Lever MA**, Hladik CM, O'Connell JL (2025) Early warning signs of salt marsh drowning indicated by widespread vulnerability from declining belowground plant biomass. , *Proc Natl Acad Sci* 122: e2425501122.

90. Giroud S, Deng L, **Lever MA,** Schilling O, Kipfer R (2025) Resilience of deep aquifer microbial communities to seasonal hydrological fluctuations, *Proc Natl Acad Sci* 122:e2422608122.

89. De Jonge C, Dubois N, Ladd N, Deng L, Gajendra N, Haghipour N, Schubert CJ, **Lever MA** (2025) Holocene environmental change in Rotsee, and its impact on sedimentary carbon storage, *Paleolimnology* 73:311-327.

88. Deng L, Bölsterli D, Glombitza C, Jørgensen BB, Røy H, **Lever MA** (2025) Drivers of methane-cycling archaeal abundances, community structure, and catabolic pathways in continental margin sediments. *Frontiers Microbiol* 16:1550762. *doi: 10.3389/fmicb.2025.1550762*.

87. Rodriguez P, Berg JS, Deng L, Vogel H, Okoniewski M, **Lever MA**, Magnabosco C (2025) Persistent functional and taxonomic groups dominate an 8,000-year sedimentary sequence from Lake Cadagno, Switzerland. *Frontiers Microbiol* 16:1504355. *doi: 10.3389/fmicb.2025.1504355.*

86. Runion K, Deepak M, Alber M, **Lever MA**, O'Connell J (2024) Capturing spatiotemporal variation in salt marsh belowground biomass, a key resilience metric, through geoinformatics. *Ecosphere,* https://doi.org/10.1002/ecs2.70110.

85. Baumann KBL, Mazzoli A, Salazar G, Ruscheweyh H-J, Müller B, Niederdorfer R, Sunagawa S, **Lever MA**, Lehmann MF, Bürgmann H (2024) Metagenomic and -transcriptomic analyses of microbial nitrogen transformation potential, and gene expression, in Swiss lake sediments, *ISME Comms* 4:ycae110.

84. Obradović N, Schmitz RA, Haffter F, Meier D, **Lever MA**, Schroth MH, Sander M (2024) Peat particulate organic matter accepts electrons during *in situ* incubation in the anoxic subsurface of ombrotrophic bogs, *J Geophys Res* 129:e2024JG008223.

83. Gajendra N, Deng L, Eglinton TI, Schubert CJ, **Lever MA** (2024) Impacts of temperature and fluid seepage on organic carbon chemical compositions in sediments of an active hydrothermal basin. *Org Geochem* 196:104829.

82. Meier D, van Grinsven S, Michel A, Eickenbusch P, Glombitza C, Han X, Fiskal A, Bernasconi S, Schubert CJ, **Lever MA*** (2024) Hydrogen-independent CO_2 reduction dominates methanogenesis in five temperate lakes that differ in trophic states, *ISME Communications* 4:ycae089.

81. Hoehler TM, Amend JP, Jørgensen BB, Orphan VJ, **Lever MA** (2024) Editorial: Studies on life at the energetic edge - from laboratory experiments to field-based investigations, volume II. *Frontiers Microbiol* 14:1351761.

80. Jørgensen BB, Egger M, **Lever MA**, Røy H (2024) Seawater contamination by coring and pore water sampling of marine sediments. *Chem Geol* 651:122020.

79. Ajallooeian F, Deng L, **Lever MA**, De Jonge C (2024) The seasonal variability of aquatic brGDGTs: a mesocosm approach. *Org Geochem* 189:104742.

78. Muschick M, Jemmi E, Lengacher N, Hänsch S, Wales M, Kishe MA, Mwaiko S, Dieleman J, **Lever MA**, Salzburger W, Verschuren D, Seehausen O (2023). Ancient DNA is preserved in fish fossils from tropical lake sediments. *Molecular Ecol,* https://doi.org/10.1111/mec.17159.

77. Gajendra N, Berg JS, Vogel H, Deng L, Wolf S, Bernasconi SM, Dubois N, Schubert CJ, **Lever MA*** (2023) Carbohydrate compositional trends throughout Holocene sediments of an alpine lake (Lake Cadagno). *Frontiers Earth Sci* 11:1047224.

76. Deng L, Fiskal A, Bölsterli D, Meier D, Meile C, **Lever MA*** (2023) Differential impact of two major polychaete guilds on microbial communities in marine sediments: a microcosm study. *Frontiers Marine Sci* 10:1119331.

75. **Lever MA***, Alperin MJ, Hinrichs K-U, Teske A (2023) Zonation of the active methane-cycling community in deep subsurface sediments of the Peru Trench, *Frontiers Microbiol* 14:1192029.

74. Janssen DJ, Rickli J, Wille M, Sepúlveda Steiner OR, Vogel H, Dellwig O, Berg JS, Boffard D, **Lever MA**, Hassler CS, Jaccard SL (2022) Chromium cycling in euxinic basins challenges δ^{53}Cr paleoredox proxy applications, *Geophys Res Lett* 49:e2022GL099154.

73. Huang X, Liu X, Xue Y, Pan B, Xiao L, Wang S, **Lever MA**, Hinrichs K-U, Inagaki F, Liu C (2022) Anaerobic methane production by wood-rot fungi via a new, halomethane-dependent pathway. *Microbiol Spectrum* e01700-22.

72. Sena C, Parkhurst DL, Tepley FJ III, Jiang F, van der Land C, Coelho JRC, Oliveira V, **Lever MA**, Ishizuka O, Arculus R (2022) Formation of calcium chloride brines in volcaniclastic-rich sediments, *Frontiers Earth Sci* 10:869567.

71. Deng L, Meile C, Fiskal A, Bölsterli D, Han X, Gajendra N, Dubois N, Bernasconi S, **Lever MA*** (2022) Deposit-feeding worms control subsurface ecosystem functioning in intertidal sediment with strong physical forcing, *PNAS Nexus* 1:pgac146.

70. Han X, Tolu J, Deng L, Fiskal A, Schubert CJ, Winkel LHE, **Lever MA*** (2022) Physical shielding promotes long-term preservation of biomolecules in lake sediments, *PNAS Nexus* 1:1-15.

69. Bruni ET, Blattmann TM, Haghipour N, Louw DC, **Lever MA**, Eglinton TI (2022) Sedimentary hydrodynamic processes under low-oxygen conditions: implications for past, present, and future oceans, *Frontiers Earth Sci* 10:886395.

68. Baumann KBL, Thoma R, Callbeck CM, Niederdorfer R, Schubert C, Müller B, **Lever MA**, Bürgmann H (2022) Trophic status and local conditions affect microbial potential for denitrification versus internal nitrogen cycling in lake sediments. *mSphere* 7:e010130-21.x

67. van Grinsven S, Meier D, Michel A, Han X, Schubert CJ, **Lever MA*** (2022) Role of redox zone and trophic history as drivers of methanotrophic bacterial abundance and community structure in lake sediments. *Frontiers Environ Sci* 10:857358.

66. Berg JS, Lepine M, Laymand E, Han X, Vogel H, Morlock MA, Gajendra N, Gilli A, Bernasconi SM, Schubert C, Su G, **Lever MA** (2022) Ancient and modern geochemical signatures in the 13,500-year sedimentary record of Lake Cadagno. *Frontiers in Earth Sci* 9:754888.

65. Lagostina L, Frandsen S, MacGregor BJ, Glombitza C, Deng L, Fiskal A, Li J, Doll M, Geilert S, Schmidt M, Scholz F, Bernasconi SM, Jørgensen BB, Hensen C, Teske A, **Lever MA*** (2021) Interactions of

temperature and energy supply as drivers of microbial communities in hydrothermal sediment. *Communications Biology* 4:1006.

64. Fiskal A, Anthamatten E, Deng L, Han X, Lagostina L, Michel A, Zhu R, Dubois N, Schubert CJ, Bernasconi SM, **Lever MA*** (2021) Carbon sources of benthic fauna in temperate lakes across multiple trophic states. *Biogeosciences* 18:4369-4388.

63. Fiskal A, Gaillard A, Giroud S, Malcic D, Joshi P, Sander M, Schubert CJ, **Lever MA*** (2021) Effects of macrofaunal recolonization on biogeochemical processes and microbiota – a mesocosm study. *Water* 13:1599.

62. Eugster W, Baumgartner LP, Bachmann O, Baltensperger U, Dèzes P, Dubois N, Foubert A, Heitzler M, Henggeler K, Hetényi G, Hurni L, Müntener O, Nenes A, Reymond C, Röösli C, Rothacher M, Schaub M, Steinbacher M, Vogel H, Andres M, Anselmetti F, Asse D, Boivin P, Bonadonna C, Bouffard D, Brockmann E, Burlando P, Caricchi L, Chiaradia M, Farinotti D, Fierz C, Gessler A, Giuliani G, Grand S, Grosjean M, Guisan A, Hagedorn F, Haslinger F, Heiri O, Hermann J, Hernandez Almeida I, Hunkeler D, Ijejika Speranza C, Iosifescu-Enescu I, Jaccard S, Jäggi A, Kipfer R, Kouzmanov K, Leuenberger M, **Lever MA**, Linde N, Lui M, McKenzie JA, Mestrot A, Moscariello A, Payne D, Quintal B, Randin C, Reimann S, Rigling A, Schirmer M, Tinner W, Valley B, Walter F, Wicki F, Wiemer S, Zajacz (2021) Geosciences roadmap for research infrastructures 2025-2028 by the Swiss Geosciences Community, *Swiss Academies Communications* 16:1-55.

61. Han X, Schubert CJ, Fiskal A, Dubois N, **Lever MA*** (2020) Eutrophication as a driver of microbial community structure in lake sediments. *Environ Microbiol* 22:3446-3462.
Figure 2 featured in 4th edition of "Wetzel's Limnology" (Jones I and Smol J, eds., Springer).

60. Deng L, Bölsterli D, Kristensen E, Meile C, Su C-C, Bernasconi SM, Seidenkrantz M-S, Lagostina L, Han X, Glombitza C, Jørgensen BB, Røy H, **Lever MA*** (2020) Macrofaunal control of microbial community structure in continental margin sediments. *Proc Natl Acad Sci USA* 117:15911-15922.

59. Zhu R, Tolu J, Deng L, Fiskal A, Winkel L, **Lever MA** (2020) Improving the extraction efficiency of sedimentary carbohydrates by sequential hydrolysis. *Organic Geochem* 141:103963.

58. Fiskal A, Deng L, Michel A, Eickenbusch P, Han X, Lagostina L, Zhu R, Sander M, Schroth MH, Bernasconi SM, Dubois N, **Lever MA*** (2019) Effects of eutrophication on sedimentary organic carbon cycling in five temperate lakes. *Biogeosciences* 16:3725-3746.

57. Eickenbusch P, Takai K, Sissmann O, Suzuki S, Menzies C, Sakai S, Sansjofre P, Tasumi E, Bernasconi SM, Glombitza C, Jørgensen BB, Morono Y, **Lever MA*** (2019) Origin of short-chain organic acids in serpentinite mud volcanoes of the Mariana Convergent Margin. *Frontiers Microbiol* 10:1729 (*part of Deep Carbon Observatory's Research Topic "Deep Carbon Science"*).

56. Deng L, Fiskal A, Han X, Dubois N, Bernasconi S, **Lever MA*** (2019) An improved method for the flow cytometric quantification of microbial populations in lake and marine sediments. *Frontiers Microbiol* 10:720.

55. van Dijk J, Fernandez A, Storck JC, White T, **Lever MA**, Müller IA, Bishop S, Seifert RF, Driese SG, Krylov A, Ludvigson GA, Turchyn AV, Lin CY, Wittkop C, Bernasconi SM (2019) Experimental calibration of clumped isotopes in siderite between 8.5 and 62°C and its application as paleo-thermometer in paleosols. *Geochim Cosmochim Acta* 254:1-20.

54. Hensen C, Duarte JC, Vannucchi P, Mazzini A, **Lever MA**, Pedro Terrinha, Louis Géli, Pierre Henry, Heinrich Villinger, Jason Morgan, Mark Schmidt, Marc-André Gutscher, Rafael Bartolome, Yama Tomonaga, Alina Polonia, Eulàlia Gràcia, Umberta Tinivella, Matteo Lupi, M Namık Çağatay, Marcus Elvert, Dimitris Sakellariou, Luis Matias, Rolf Kipfer, Aristomenis P Karageorgis, Livio Ruffine, Volker Liebetrau, Catherine Pierre, Christopher Schmidt, Luis Batista, Luca Gasperini, Ewa Burwicz, Marta Neres, Marianne Nuzzo (2019) Marine transform faults and fracture zones: a new perspective integrating seismicity, fluid flow and life. *Frontiers Earth Sci* 7:39.

53. Parker K, Barragán Borrero V, van Leeuwen D, **Lever MA**, Sander M (2019) Phosphorous-32 radioisotopic labeling of double-stranded RNA (dsRNA) to study fate of RNA inference (RNAi) pesticides in agricultural soils. *Environ Sci & Technol* 53:3027-3036.

52. Heuer VB, **Lever MA**, Morono Y, Teske A (2019) The limits of life and the biosphere in the Earth's Interior. *Oceanography* 32:1.

51. Geilert S, Hensen C, Schmidt M, Liebetrau V, Scholz F, Doll M, Deng L, Fiskal A, **Lever MA**, Su C-C, Schlömer S, Sarkar S, Thiel V, Berndt C (2018) From hydrothermal vents to cold seeps – pore fluid geochemistry in the Guaymas Basin, Gulf of California. *Biogeosciences* 15:1715-31.

50. Torti A, Jørgensen BB, **Lever MA*** (2018) Preservation of microbial DNA in marine sediments: insights from extracellular DNA pools. *Environ Microbiol* 20:4526-4542.

49. Walpen N, Lau M, Fiskal A, Getzinger G, Meyer S, Nelson T, **Lever MA**, Schroth MH, Sander M. Oxidation of reduced peat particulate organic matter by dissolved oxygen: quantification of apparent rate constants in the field. *Environ Sci Technol* 52:11151-60.

48. Møller MH, Glombitza C, **Lever MA**, Deng L, Morono Y, Inagaki F, Doll M, Su C-C, Lomstein BA (2018) D:L-amino acid modeling reveals fast microbial turnover of days to months in the subsurface hydrothermal sediment of Guaymas Basin. *Frontiers Microbiol* 9:967.

47. Ijiri A, Inagaki F, Kubo Y, Adhikari RR, Hattori S, Hoshino T, Kawagucci S, Morono Y, Ohtomo Y, Ono S, Takai K, Toki T, Wang DT, Yoshinaga M, Arnold GL, Ashi J, Case D, Feseker T, Hinrichs KU, Ikegawa Y, Ikehara M, Imachi H, Kallmeyer J, Kumagai H, **Lever MA**, Morita S, Nakamura K, Nakamura Y, Nishio Y, Nishizawa M, Orphan V, Røy H, Sakai S, Schmidt F, Tani A, Tanikawa W, Terada T, Tomaru H, Tsuji T, Tsunogai U, Yamaguchi YT, Yoshida N (2018) Deep-biosphere methane production stimulated by geofluids in the Nankai accretionary complex. *Science Advances* 4:eaao4631.

46. Yu T, Wu W, Liang W, **Lever MA**, Hinrichs K-U, Wang F (2018) Growth of sedimentary *Bathyarchaeota* on lignin as an energy source. *Proc Natl Acad Sci USA* 115:6022-6027.

45. Šantl-Temkiv T, Gosewinkel U, Starnawski P, **Lever MA**, Finster K (2018) Aeolian dispersal of bacteria in southwest Greenland: their sources, abundance, diversity and physiological states. *FEMS Microbiol Ecol* 94:fiy031.

44. van Dijk J, Fernandez A, Müller IA, **Lever MA**, Bernasconi SM (2018) Oxygen isotope fractionation in the siderite-water system between 8.5 and 62°C. *Geochim Cosmochim Acta* 220:535-551.

43. Jochum LM, Chen X, **Lever MA**, Loy A, Schreiber L, Jørgensen BB, Schramm A, Kjeldsen KU (2017) Depth distribution and assembly of sulfate-reducing microbial communities in marine sediments of Aarhus Bay. *Appl Environ Microbiol* 83:e01547-17.

42. Zhuang G-C, Lin Y-S, Bowles MW, Heuer VB, **Lever MA**, Elvert M, Hinrichs K-U (2017) Distribution and isotopic composition of trimethylamine, dimethylsulfide, and dimethylsulfoniopropionate in marine sediments. *Marine Chem* 196:35-46.

41. Labonté JM, **Lever MA***, Edwards KJ, Orcutt BN (2017) Influence of igneous basement on deep sediment microbial diversity on the eastern Juan de Fuca Ridge flank. *Frontiers in Microbiol* 8:1434.

40. Evans TW, Wörmer L, **Lever MA**, Lipp JS, Lagostina L, Lin Y-S, Jørgensen BB, Hinrichs K-U (2017) Size composition and adaptive strategies of the subseafloor microbial community in the Benguela upwelling area – a comparative study based on intact membrane lipid and DNA analysis**.** *Organic Geochemistry* 11:86-100.

39. Chen X, Andersen TJ, Morono Y, Inagaki F, Jørgensen BB, **Lever MA*** (2017) Bioturbation as a key driver behind the dominance of Bacteria over Archaea in near-surface sediment. *Scientific Reports* 7:2400.

38. Starnawski P, Bataillon T, Ettema TJG, Jochum LM, Schreiber L, Chen X, **Lever MA**, Polz MF, Jørgensen BB, Schramm A, and Kjeldsen KU (2017) Microbial community assembly and evolution in subseafloor sediment. *Proc Natl Acad Sci USA* 114:2940-2945.

37. Liu C-H, Huang X, Nie T-N, Duan N, Xue Y-R, Zhao T-X, **Lever MA**, Hinrichs K-U, Inagaki F (2017) Exploration of cultivable fungal communities in deep coal-bearing sediments from ~1.3 to 2.5 km below the ocean floor. *Environ Microbiol* 19:803-819.

36. Berndt C, Hensen C, Mortera-Gutierrez, Sarkar S, Geilert S, Schmidt M, Liebetrau V, Kipfer R, Scholz F, Doll M, Muff S, Karstens J, Planke S, Petersen S, Böttner C, Chi W-C, Moser M, Behrendt R, Fiskal A, **Lever MA**, Su C-C, Deng L, Brennwald M, Lizarralde D (2016) Rifting under steam – how rift magmatism triggers methane venting from sedimentary basins. *Geology* 44:767-770.

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33. **Lever MA*** (2016) In chaotropy lies opportunity. *Frontiers Microbiol* 6:1505.

32. Tamez-Hidalgo P, **Lever MA**, Christensen BT, Elsgaard L, Lomstein BA (2016) Endospores, prokaryotes, and microbial indicators in arable soils from three long-term experiments. *Biol Fertil* Soils 52:101-112

31. **Lever MA*** (2016) A new era of methanogenesis research. *Trends Microbiol* 24:84-86.

30. Torti A, **Lever MA**, Jørgensen BB (2015) Origin, dynamics, and implications of extracellular DNA pools in marine sediments. *Marine Genomics* 3:185-196.

29. Inagaki F, Hinrichs K-U, Kubo Y, Bowles MW, Heuer VB, Hong W-L, Hoshino T, Ijiri A, Imachi H, Ito M, Kaneko M, **Lever MA**, Lin Y-S, Methé BA, Morita S, Morono Y, Tanikawa W, Bihan M, Bowden SA, Elvert M, Glombitza C, Gross D, Harrington GJ, Hori T, Li K, Limmer D, Liu C-H, Murayama M, Ohkouchi N, Ono S, Park Y-S, Phillips SC, Prieto-Mollar X, Purkey M, Riedinger N, Sanada Y, Sauvage J, Snyder G, Susilawati R, Takano Y, Tasumi E, Terada T, Tomaru H, Trembath-Reichert E, Wang DT, Yamada Y (2015) Exploring deep microbial life in coal-bearing sediment down to ~2.5 km below the ocean floor. *Science* 349:420-424.

28. Ozuolmez D, Na H, **Lever MA**, Kjeldsen KU, Jørgensen BB, Plugge CM. 2015. Methanogenic archaea and sulfate reducing bacteria co-cultured on acetate: teamwork or coexistence? *Frontiers Microbiol* 6:492.

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23. **Lever MA***, Teske AP. 2015. Diversity of methane-cycling archaea in hydrothermal sediment investigated by general and group-specific PCR primers. *Appl Environ Microbiol* 81:1426- 1441.

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21. Nielsen MB, Kjeldsen KU, **Lever MA**, Ingvorsen K. 2014. Survival of prokaryotes in a polluted waste dump during remediation by alkaline hydrolysis. *Ecotoxicology* 23:404-418.

20. Biddle JF, Jungbluth SP, **Lever MA**, Rappé MS. 2014. Life in the oceanic crust. pp. 29-62 in "Microbial Life of the Deep Biosphere, Edition: 1," eds. J. Kallmeyer, D. Wagner Chapter: *Life in the Oceanic Crust*, DeGruyter.

19. Lloyd KG, Schreiber L, Petersen DG, Kjeldsen KU, **Lever MA**, Stepanauskas R, Richter M, Kleindienst S, Lenk S, Schramm A, Jørgensen BB. 2013. Single cell genomics reveal that predominant sediment archaea degrade detrital proteins. *Nature* 496:215-218.

18. **Lever MA***, Rouxel OJ, Alt J, Shimizu N, Ono S, Coggon RM, Shanks WC, Lapham L, Elvert M, Prieto-Mollar X, Hinrichs KU, Inagaki F, Teske AP. 2013. Evidence for microbial carbon and sulfur cycling in deeply buried ridge flank basalt. *Science* 339:1305-1308.

17. **Lever MA*** (2013) Functional Gene Surveys from Ocean Drilling Expeditions – A Review and Perspective. *FEMS Microbiol Ecol* 84:1-23.

16. Langerhuus AT, Røy H, **Lever MA**, Morono Y, Inagaki F, Jørgensen BB, Lomstein BA (2012) Endospore abundance and D:L amino acid modeling of bacterial turnover in Holocene marine sediment (Aarhus Bay). *Geochim Cosmochim Acta* 99:87-99.

15. **Lever MA*** (2012) Acetogenesis in the energy-starved deep biosphere – a paradox? *Frontiers in Microbiology* 2:1-18.

This article was featured in the commentary by Oren A (2012) There must be an acetogen somewhere. Frontiers in Microbiol 3:1-2.

14. Yanagawa K, Sunamura M, **Lever MA**, Morono Y, Hiruta A, Matsumoto R, Urabe T, Inagaki F (2011) Niche separation of methanotrophic Archaea (ANME-1 and -2) in cold seep sediments off of Joetsu, Japan Sea. *Geomicrobiol J* 28:118-129.

13. Steinsbu BO, Thorseth IH, Nakagawa S, Inagaki F, **Lever MA**, Engelen B, Øvreas L, Pedersen RB (2010) *Archaeoglobus sulfaticallidus* sp. nov., a novel thermophilic and facultative lithoautotrophic sulfate-reducer isolated from black rust exposed to hot ridge flank crustal fluids. *Int J Syst Evol Microbiol* 60:2745-2752.

12. **Lever MA***, Heuer V, Morono Y, Masui N, Schmidt F, Alperin MJ, Inagaki F, Hinrichs K-U, Teske A (2010) Acetogenesis in deep subseafloor sediments of the Juan de Fuca Ridge Flank: a synthesis of geochemical, thermodynamic, and gene-based evidence. *Geomicrobiol J* 27:183- 211.

11. Joye SB, Samarkin VA, Orcutt BN, MacDonald IR, Hinrichs K-U, Elvert M, Teske AP, Lloyd KG, **Lever MA**, Montoya JP, Meile CD (2009) Metabolic variability in seafloor brines revealed by carbon and sulphur dynamics. *Nature-Geoscience* 2:349-354.

10. Engelen B, Ziegelmüller K, Wolf L, Köpke B, Gittel A, Treude T, Nakagawa S, Inagaki F, **Lever MA**, Steinsbu BO, Cypionka H (2008) Fluids from the ocean crust support microbial activities within deep biosphere. *Geomicrobiol J* 25:56-66.

9. Nakagawa S, Inagaki F, Suzuki Y, Steinsbu BO, **Lever MA**, Takai K, Engelen B, Sako Y, Wheat CG, Horikoshi K (2006) Microbial community in black rust exposed to hot ridge flank crustal fluids. *Appl Environ Microbiol* 72:6789-6799.

8. **Lever MA***, Alperin MJ, Engelen B, Inagaki F, Nakagawa S, Steinsbu B, Teske A (2006) Trends in basalt and sediment core contamination during IODP Expedition 301. *Geomicrobiol J* 23:517- 530.

7. Inagaki F, Nunoura T, Nakagawa S, Teske A, **Lever M**, Lauer A, Suzuki M, Takai K, Delwiche M, Colwell FS, Nealson KH, Horikoshi K, D'Hondt SL, Jørgensen BB (2006) Biogeographical distribution and diversity of microbes in methane hydrate-bearing deep marine sediments, on the Pacific Ocean Margin. *Proc Natl Acad Sci USA* 103:2815-2820.

6. Biddle JF, Lipp JS, **Lever MA**, Lloyd K, Sørensen K, Anderson R, Fredricks HF, Elvert M, Kelly TJ, Schrag DP, Sogin ML, Brenchley JE, Teske A, House CH, Hinrichs K-U (2006) Heterotrophic Archaea dominate sedimentary subsurface ecosystems off Peru. *Proc Natl Acad Sci* USA 103:3846-3851.

5. Fisher AT, Urabe T, Klaus A and the Expedition 301 Scientists (2005) The hydrogeologic architecture of basaltic oceanic crust: compartmentalization, anisotropy, microbiology, and crustal-scale properties on the eastern flank. *Proc Integrated Ocean Drilling Program 301*.

4. Dhillon A, **Lever M**, Lloyd K, Sogin ML, Teske A (2005) Methanogen diversity evidenced by molecular characterization of methyl coenzyme M reductase A (mcrA) genes in hydrothermal sediments of the Guaymas Basin. *Appl Environ Microbiol* 71:4592-4601.

3. **Lever MA***, Valiela I (2005) Response of microphytobenthic biomass to experimental nutrient enrichment and grazer exclusion at different land-derived nitrogen loads. *Mar Ecol Prog Ser* 294:117-129.

2. Zühlsdorff L, Hutnak M, Fisher AT, Spiess V, Davis EE, Nedimovic MR, Carbotte S, Villinger H, Becker K, Urabe T, Klaus A, Iturrino GJ, Bartetzko A, Coggon R, Dumont M, Engelen B, Goto S, Hawkins L, Heuer V, Hulme SM, Inagaki F, Kiyokawa S, **Lever MA**, Nakagawa S, Nielsen ME, Noguchi T, Sager WW, Sakaguchi M, Steinsbu BO, Tsuji T, Wheat CG, Rice J (2004) Site surveys related to IODP Expedition 301; ImageFlux (S0149) and RetroFlux (TN116) expeditions and earlier studies. *Proc Integrated Ocean Drilling Program 301*.

1. Novak M, **Lever M**, Valiela I (2001) Top-down vs. bottom-up controls of microphytobenthic standing crop: role of mud snails and nitrogen supply in the littoral of Waquoit Bay estuaries. *Biol Bull* 201:292-294.

List of Presentations *(* indicates invited; only oral presentations included)*

* Lever MA. "Growth of methane-cycling archaea in subsurface sediments fueled by burial-related geochemical changes", Goldschmidt Conference, Prague, Czech Republic, July 6-11. ***Oral presentation***.

* Lever MA. "CO_2 reduction independent of hydrogen drives methanogenesis in five temperate lakes", Goldschmidt Conference, Chicago, USA, August 18-23. ***Oral presentation***.

* Lever MA. "Empirical and experimental evidence with bioturbating macrofauna indicates fundamental differences in the drivers of bacterial and archaeal community structure in marine sediment", Aarhus University, Aarhus, Denmark, June 6, 2023. ***Invited presentation***.

* Lever MA. "The role of macrofauna in controlling the community structure of microorganisms in marine surface sediments", Nereis Park Online Seminar Series, Nereis Park Association, May 9, 2023. ***Invited speaker.***

* Lever MA. "The carbon cycle in marine sediments – natural controls and human influences", Advisory Council Meeting, Marine Science Institute, University of Texas at Austin, March 3, 2023. ***Invited speaker.***

* Lever MA. Potential importance of diffuse hydrothermal fluids in sustaining life in seismically active deep sea environments. Center for Planetary Systems Habitability, University of Texas at Austin, February 13, 2023. ***Oral presentation.***

* Lever MA. Temperature, energy availability, and their interactions as drivers of sediment microbial community structure, 4th International Workshop on Microbial life under extreme energy limitation (Sandbjerg Manor, Sønderborg, Denmark; September 5-9, 2022). ***Invited speaker***.

* Lever MA. Ecology of the aquatic sedimentary carbon cycle. University of Toronto, Department of Physical and Environmental Sciences, April 29, 2021. ***Invited speaker.***

* Lever MA. The limits of life in Earth's interior. Part I. Limits of life in subseafloor sediment and ocean crust. Origin and Prevalence of Life – A Virtual Cambridge-ETH Workshop, Zurich, Switzerland & Cambridge, United Kingdom, April 30, 2020. ***Oral presentation.***

* Lever MA. Bioturbation as a key driver of microbial community structure in marine surface sediment. Department of Environmental Sciences, University of Basel, Basel, Switzerland, November 6, 2019. ***Invited speaker.***

* Lever MA. Bioturbation as a key driver of microbial community structure in marine surface sediment. Swiss Society of Microbiology Annual Meeting, University of Zurich, Zurich, Switzerland, September 3, 2019. ***Invited speaker.***

* Lever MA & Deng L. Bioturbation as a key driver of microbial community structure in marine surface sediment. Goldschmidt Conference, Barcelona, Spain, August 18-23, 2019. ***Invited speaker.***

* Lever MA. Controls on microbial community structure in sediment: role of bioturbation and organic matter chemical composition. Deutsches GeoForschungsZentrum, Helmholtz Centre, Potsdam, Germany, July 9, 2019. ***Invited speaker.***

* Lever MA. ***"***Organic matter protection by sulfurization". The biogeochemical sulfur cycle in Messinian marginal basins: did microbes contribute to gypsum formation? European Cooperation of Science and Technology MEDSALT, University of Belgrade, Belgrade, Serbia, October 9, 2018. ***Oral presentation.***

* Lever MA. "Microbial carbon cycling in surface sediment – role of bioturbation and eutrophication", Aarhus University, Aarhus, Denmark, September 28, 2018. ***Invited speaker.***

* Lever MA. "Subseafloor Microbial Ecology"; Gordon Research Conference "Deep Carbon Science in the Context of Geologic Time", Bryant University, Smithfield, RI, June 17-22, 2018. ***Keynote speaker.***

* Lever MA. "Insights into microbial population dynamics and DNA cycling in sediments from extracellular DNA pools. European Geophysical Union, Annual Meeting, Vienna, Austria, April 12, 2018. ***Oral presentation***.

* Lever MA. "A fresh look at microbial methane cycling in lacustrine and marine sediments". Ecole polytechnique fédérale de Lausanne, Lausanne, Switzerland, April 24, 2018. ***Invited speaker.***

* Lever MA. "Controls on microbial population size and community structure in subseafloor environments"; University of Torino, Torino, Italy (November 3, 2017), ***European Consortium of Ocean Research Drilling (ECORD)*** "***Distinguished Lecturer"***.

* Lever MA. "Controls on microbial population size and community structure in subseafloor environments"; University of Cambridge, Cambridge, UK (October 31, 2017), ***European Consortium of Ocean Research Drilling (ECORD)*** "***Distinguished Lecturer"***.

* Lever MA. "Controls on microbial population size and community structure in subseafloor environments"; Newcastle University, Newcastle, UK (October 27, 2017), ***European Consortium of Ocean Research Drilling (ECORD)*** "***Distinguished Lecturer"***.

* Lever MA. "Controls on microbial population size and community structure in subseafloor environments"; Heriot-Watt University, Edinburgh, UK (October 24, 2017), ***European Consortium of Ocean Research Drilling (ECORD)*** "***Distinguished Lecturer"***.

* Lever MA. "Controls on microbial population size and community structure in subseafloor environments"; University of New Brunswick, Fredericton, Canada (October 19, 2017), ***European Consortium of Ocean Research Drilling (ECORD)*** "***Distinguished Lecturer"***.

* Lever MA. "Controls on microbial population size and community structure in subseafloor environments"; Acadia University, Acadia, Canada (October 18, 2017), ***European Consortium of Ocean Research Drilling (ECORD)*** "***Distinguished Lecturer"***.

* Lever MA. "Controls on microbial population size and community structure in subseafloor environments"; Saint Francis University, Antigonish, Canada (October 17, 2017), ***European Consortium of Ocean Research Drilling (ECORD)*** "***Distinguished Lecturer"***.

* Lever MA. "Controls on microbial population size and community structure in subseafloor environments"; Dalhousie University, Halifax, Canada (October 16, 2017), ***European Consortium of Ocean Research Drilling (ECORD)*** "***Distinguished Lecturer"***.

* Lever MA. "Controls on microbial population size and community structure in subseafloor environments"; Memorial University of Newfoundland, St. John's (October 13, 2017), ***European Consortium of Ocean Research Drilling (ECORD)*** "***Distinguished Lecturer"***.

* Lever MA. Microbial life under extreme energy limitation. Marine Geomicrobiology – a matter of energy, a workshop in honor of Bo Barker Jørgensen and his contributions to sediment geomicrobiology over the past 40+ years. Sønderborg, Denmark, August 28-September 1, 2017. ***Invited speaker***.

* Lever MA. Microbial controls on the fate of organic matter in Earth's largest carbon sink. ETH Zurich, "USYS 2017" biennial conference of Department of Environmental Systems Science, June 6-8, 2017. ***Keynote speaker***.

* Lever MA. Genotypic and phenotypic characteristics of microbial life under extreme energy limitation. ASM Microbe, New Orleans, USA, June 1-5, 2017. ***Plenary speaker***.

* Lever MA. Methane-cycling archaeal abundance and community structure in five lakes differing in trophic state (Switzerland). Eawag, Kastanienbaum, March 20, 2017. ***Invited speaker***.

* Lever MA. Between now and 2019 - an overview of planned Deep Carbon Observatory synthesis activities with focus on the deep life community. Deep Carbon Observatory, Deep Life Community meeting, Natural History Museum, Edinburgh, UK; March 26-27, 2017. ***Invited speaker***.

* Lever MA. What distinguishes the surface and subsurface microbial biospheres in sediments? University of Konstanz, Germany, January 25, 2017. ***Invited speaker***.

Lever MA. Defining the ecological boundary between surface and subsurface sediments. Institute of Biogeochemistry and Pollutant Dynamics (IBP) Seminar, Department of Environmental Systems Science, ETH Zurich, November 2, 2016. ***Oral presentation.***

* Lever MA. Defining the ecological boundary between surface and subsurface sediments. UK Geomicrobiology Network, Annual Meeting, Bangor, Wales, June 13, 2016. ***Keynote speaker***.

* Lever MA. Controls on microbial population size and community structure from surface sediments to the deep biosphere, Eawag, Dübendorf, Switzerland, November 6, 2015. ***Invited speaker***.

* Lever MA. Optimizing substrate utilization on a mixed diet. International Workshop on Microbial Life under Extreme Energy Limitation. Sønderborg, Denmark, September 21-25, 2015. ***Invited speaker***.

* Lever MA. Controls on microbial carbon cycling in sediments. Molecular Microbial Ecology group seminar series, Eawag, Dübendorf, Switzerland, April 7, 2015. ***Invited speaker***.

* Lever MA. Deep Carbon Observatory, Early Career Scientist Workshop, San José, Costa Rica, February 18-21, 2014. ***Invited participant and speaker***.

* Lever MA. Deep Carbon Observatory, Deep Life Directorate Meeting, Troutdale, Oregon, USA, May 14-15, 2013. ***Invited speaker***.

* Lever MA. Center for Dark Energy Biosphere Investigations (C-DEBI), April 4, 2013. ***Invited Network speaker*** (http://www.youtube.com/watch?v=T2yrVDXoiAw).

* Lever MA. Life in the oceanic subseafloor: organisms, energy sources, and metabolic strategies. Session: Geosphere-biosphere interaction on and below the seafloor, Geologische Vereinigung 2012 Annual Meeting, Hamburg, Germany. September 23-28, 2012. ***Keynote speaker***.

* Lever MA. A potential niche for acetogens under extreme energy limitation. *International* Workshop on Microbial Life under Extreme Energy Limitation. Aarhus, Denmark, May 6-9, 2012. ***Invited speaker.***

Lever MA. The apparent paradox of acetogenesis in the energy-starved subseafloor. The Deep-Sea & Sub-

Seafloor Frontier Conference, March 11-14, 2012, Barcelona, Spain. ***Contributed talk.***

* Lever MA, Lloyd KG, Contamination control, nucleic acid isolation, amplification, and quantification. Dark Energy Biosphere Institute – Research Coordination Network *(DEBI- RCN)*, Workshop at University of North Carolina at Chapel Hill, March 6-9, 2011, Chapel Hill, North Carolina, USA. ***Invited speaker***.

Lever MA, Rouxel O, Alt J, Shimizu N, Ono S, Inagaki F, Teske A. Functional gene and ^{34}S- isotopic evidence of microbial methane and sulfur cycling in 3.5 million-year-old buried ridge flank basalt. International Society of Microbial Ecology, The 13th International Symposium on Microbial Ecology, August 20-26, 2010, Seattle, Washington, USA. ***Contributed talk***.

Lever MA. High metabolic diversity in single organisms as a survival strategy under extreme energy limitation: the case of acetogens. Goldschmidt 2009 – "Challenges to our volatile planet*",* June 21-26, 2009, Davos, Switzerland. ***Contributed talk.***

Lever MA, Inagaki F, Morono Y, Masui N, Teske A, Ubiquitous distribution of methanogens and anaerobic methanotrophs in subseafloor sediments and basalts. (Goldschmidt 2008 – "from Sea to Sky*"*, Vancouver, Canada, July 13-18, 2008. ***Contributed talk.***

Lever MA, Teske A, Vertical distribution of methanogens, methanotrophs, and active Archaea in deep subsurface sediments of the Peru Trench as evaluated from functional genes (mcrA) and 16S rRNA profiles; Aquatic Sciences Meeting, American Society of Limnology and Oceanography, Santa Fe, NM, February 4-9, 2007. ***Contributed talk.***

Lever MA, Teske A, Trends in basalt and sediment core contamination during IODP Expedition 301; NASA Astrobiology Science Conference, Washington, DC, March 26-31, 2006. ***Contributed talk.***

List of courses taught

At University of Texas at Austin

Instructor, Upper undergraduate-level and graduate-lecture course "Coastal Biogeochemical Processes" (Marine Science MNS 352/382), hands-on research training course, biannually since spring 2025.

Instructor, Upper undergraduate-level and graduate-level lecture course "Marine Geoecology" (Marine Science MNS 352/382), biannually since spring semester 2025

Instructor, Graduate-level lecture course "Marine Biogeochemical Cycles" (Marine Science 482C), fall 2023 (with Zhanfei Liu)

Instructor, Undergraduate course "Estuarine Ecology" (Marine Science 382), spring 2024 (with Kenneth H. Dunton), biannually starting in spring 2024.

Instructor, Graduate-level seminar course "Topics in Marine Science: Marine Environmental Microbiology" (Marine Science 193), biannually since fall 2023.

Instructor, Undergraduate course "Seminar in Marine Science" (Marine Science 101), annually since fall 2023.

At ETH Zurich

Instructor, graduate-level course "***Environmental Microbiology***" (701-1310), spring 2015-present (with Martin Schroth).

Instructor, Bachelor-level block course "*Mikrobielle Ökologie*" (***Microbial Ecology***; 551-0386), spring 2015-present.

Instructor, Bachelor-level course "*Einführung in die Umweltchemie und Umweltmikrobiologie*" (***Introduction to Environmental Chemistry and Environmental Microbiology***; 701-0208), spring 2016-present (with Gerhard Furrer and Kristopher McNeill).

Instructor, Master-level courses "***Term Paper 1: Writing***" (701-1303) and "***Term Paper 2: Seminar***" (701-1302) since fall 2014.

At Aarhus University

Instructor, "***Geomicrobiology***" Master-level course, fall semester 2013.

Guest lectures

Guest lecture for Bachelor-level course "Geobiologie" (***Geobiology;*** 651-4143) at Department of Earth Science, ETH Zurich on "Bioturbation im Kohlenstoffkreislauf und deren Einfluss auf mikrobielle Artengemeinschaften und mikrobielle Prozesse", November 30, 2018.

Guest lecture for Master-level course "***Marine Geology and Geochemistry***" (651-4235) at Department of Earth Science, ETH Zurich on "Controls on microbial population size and community structure in subseafloor environments", January 24, 2018.

Guest lecturer for Master-level course "***Geomicrobiology & Environmental Microbiology***" at University of Tübingen on "Anaerobic carbon cycling with special focus on microbial methanogenesis and acetogenesis". April 28, 2017.

Instructor, European Consortium of Ocean Research Drilling, Summer PhD School 2014 "***Subseafloor biosphere: current advances and future challenges***", University of Bremen, Bremen, Germany, September 22-October 2, 2014.

Guest lecturer for Bachelor-level course ***Molecular Microbial Ecology*** at Institute of Biological Sciences, Aarhus University (2010, 2011).

Mentorship

At University of Texas at Austin

Graduate students:
Claire White (masters student, since August 2024)
John E. Hinkle (doctoral student, since June 2024)
Kaitlyn Callagher (doctoral student; since August 2023)
Kyle Runion (PhD candidate; August 2022-May 2025 (graduation))

Research Assistant:
Daniel Hardin (since January 2024)
Victoria Grisson (September 2023 to May 2024)

Summer interns:
Victoria Grisson, 2023
Alan Vuong, 2023

Bachelor student:
Brode Kessler, undergraduate research project, spring 2026
Sarah Gerlach, undergraduate research project, spring 2025 + Senior thesis (since fall 2025)
Sarah Galloway, undergraduate research project, spring 2024
Victoria Grisson, undergraduate research project, spring 2023

Member of Graduate student committees:
Ariel Bellatin (doctoral student, since January 2025)
Mariangel Correa Orellana (doctoral student, since June 2024)
Jack Lloyd (MS student, since September 2023)
Sofia Armada Tapia (MS student, July 2023-September 2025 (graduation))
Kody Barone (MS student; July 2023-August 2025 (graduation))
Natalie Sarno (Doctoral student, Department of Integrative Biology; since April 2023)
Emily Bristol (PhD candidate; January 2023-December 2023 (graduation))
Kyle Capistrant Fossa (PhD candidate, November 2022-May 2025 (graduation))

At ETH Zurich

Senior Research Associate (Oberassistent)

Clemens Glombitza (April 2019-May 2022; starts Water Chemist at Swiss Federal Nuclear Safety Inspectorate (ENSI) in June 2022)

Postdoctoral scientists:

Dimitri Meier (April 2021-July 2022; Senior Scientist at University of Bayreuth, Germany)
Longhui Deng (April 2020-June 2022; now Asst Prof at Shanghai Jiao Tong Univ., China)
Caroline Scholze (January-August 2020; now Senior Scientist at State of Schleswig-Holstein, Germany)
Jasmine Berg (January 2019-December 2020; now Asst Professor of Biogeochemistry, Univ. Lausanne, CH)
Rong Zhu (August 2015-August 2019; now project coordinator at Dodge Technology, Ltd. Zurich, CH)
Andrea Torti (November 2015-February 2016; Aarhus University, DK; now high school teacher)

Ph.D. students:

Sébastien Giroud (2020-25 (graduation); jointly with Rolf Kipfer, Eawag, now postdoctoral researcher at Eawag)
Elena Bruni (January 2019-February 2023 (graduation); jointly with Tim Eglinton, Dep. of Earth Sciences, ETH Zurich)
Niroshan Gajendra (April 2019-November 2022 (graduation)), now Scientist, Institute for Energy Technology (IFE), Kjeller, Norway
Pascal Wiesli (February 2018-June 2022 (graduation)), now Assistant Leader, Nutrition Department, National Economic Supply, Swiss Federal Government.
Xingguo Han (October 2016-December 2020 (graduation); Postdoctoral Scientist, Swiss Federal Institute of Forest, Snow and Landscape Research & University of Lund
Annika Fiskal (February 2016-June 2020 (graduation); Staff Scientist, German Federal Insitute of Hydrology, Germany)
Longhui Deng (October 2015 - November 2019 (graduation); now Asst Prof at Shanghai Jiao Tong Univ., China
Lorenzo Lagostina (December 2014-June 2019 (graduation); now Postdoctoral researcher, Helmholtz Institute for One Health, Greifswald, Germany
Philip Eickenbusch (October 2014-April 2019 (graduation); now Staff Scientist, Zurich Cantonal Water Office, CH

Master thesis students:

Silvano Murk (November 2021-May 2022 (graduation)); Dept Environmental Systems Science, ETH Zurich
Sarah Wolf (November 2021-May 2022 (graduation)); Department of Biology, ETH Zurich
Kristina Bright (September 2021-April 2022 (graduation)); Department of Biology, ETH Zurich
Philipp Spiegel (May 2021-December 2022 (graduation)); Department of Biology, ETH Zurich
Lena Bakker (February-August 2021 (graduation)); Department of Biology, ETH Zurich
Tibor Talas (January 2021-2022 (graduation)); University of Lausanne; co-advised with Stuart Lane
Sébastien Giroud (September 2019- March 2020 (graduation)); Interdisciplinary Sciences Program, ETH Zurich
Aixala Gaillard (September 2019- March 2020 (graduation)); Dept Environmental Systems Science, ETH Zurich
Fabian Guggisberg (August 2019- March 2020 (graduation)); Dept Environmental Systems Science, ETH Zurich
Pascal Wiesli (2016-17 (graduation)); Department of Health Sciences and Technology, ETH Zurich
Ignatia Kaladze (2017-2019 (graduation)); University of Patras, Greece; co-advised with Kimon Christanis
Anja Michel (2016-2017 (graduation)); Department of Biology, ETH Zurich

Bachelor thesis students:

Xueyi Liu (July-October 2021; Nankai University, China)
Jamila Gysin (September 2020-January 2021)
Donat Crippa (April 2020-March 2021)
Silvano Murk (February 2018-May 2020)
Niklaus Kressig (February-June 2019; Department of Earth Sciences, ETH Zurich)

Philipp Wey (February-July 2018)
Damian Bölsterli (since September 2017)
Sébastien Giroud (September 2017-May 2018)
Linda Adamíková (April 2017-May 2018)
Sophie Azevedo (May 2016-January 2017)

Master thesis rotation projects
Tabea Patt (September-November 2021; Department of Biology, ETH Zurich)
Kristina Bright (June-September 2021; Department of Biology, ETH Zurich)
Philipp Spiegel (October 2020-February 2021; Department of Biology, ETH Zurich)
Lena Bakker (September-December 2020; Department of Biology, ETH Zurich)
Dejan Malcic (September-December 2019; Department of Biology, ETH Zurich)
Natalie Meyer (February-May 2019; Department of Biology, ETH Zurich)
Aileen Geers (February-May 2018; Department of Biology, ETH Zurich)
Anja Michel (February-May 2016; Department of Biology, ETH Zurich)

Work-study students:
Capucine Marion (November 2020-July 2021)
Donat Crippa (September 2020-May 2021)
Silvana Gloor (September -December 2019
Philipp Wey (November 2018-September 2019)
Eva Anthamatten (June-September 2018)
Aileen Geers (June-August 2018)
Damian Bölsterli (since February 2017-May 2018)
Anja Michel (February-August 2017)

Visiting postdoctoral scientists:
Lotta Purkamo (August 2017; University of St. Andrews, UK)
Vanessa Oliveira (October-December 2015; University of Aveiro, PT)

Visiting students:
Yuchen Meng (PhD student, starts November 2021; Tsinghua University, China)
Emile Laymand (MSc student, September 2019-February 2020; Ecole Normale Supérieure, Paris, F)
Mathilde Lepine (MSc student, August 2019-February 2020; Univ. of Technol of Compiègne, Compiègne, F)
Misato Toda (MSc student, September 2017-September 2018; Hokkaido University, JP)
Alessia Pennacchia (MSc student, September 2017-March 2018; University of Bologna, IT)
Bernhard Viehweger (PhD student, January-March, October-December 2017; Univ. of Bremen, D)
Ignatia Kaladze (MSc student, July-September 2016; University of Patras, GR)
Michail Granitsiotis (July-September 2016; Lawrence Livermore National Laboratory, USA)
Longhui Deng (April-September 2015; National Taiwan University, Taiwan)

Other groups

External PhD Thesis Examiner
Thomas Viflot (PhD Defense, May 2025; University of Bergen, Norway)
Niels Burzan (PhD Defense: January 2021; École Polytechnique Fédérale de Lausanne, CH)
Alex Gobbi (PhD Defense: April 29, 2019; Aarhus University, Roskilde, Denmark)
Rui Zhao (PhD Defense: November 22, 2018; University of Bergen, Norway)

Postdoctoral scientists:

Sigrid van Grinsven (since September 2020; main mentor: Carsten Schuber, Eawag, CH)
Guangyi Su (June 2019-September 2020; main mentor: Carsten Schubert, Eawag, CH)

Doctoral Thesis Co-Supervisor (CS) or Committee Member (CM):

Fatemeh Ajallooeian (CM; August 2020-November 2024 (graduation); main mentors: Cindy de Jonge, Tim Eglinton, Dep. of Earth Sciences, ETH Zurich)
Paula Catalina Rodriguez Ramirez (February 2020-August 2023; together with Cara Magnabosco, Dep. of Earth Sciences, ETH Zurich)
Joel Rüthi (CM; 2020-2022 (graduate; main mentor: Beat Frey, WSL, CH)
Remo Röthlin (CS; 2019-2022; main mentor: Nathalie Dubois, Dep. of Earth Sciences, ETH Zurich)
Yinyin Ma (CM; 2018-2022; graduated in December 2022; main mentor: David Johnson, Eawag Dübendorf)
Lotta Ternieten (CM; since 2017; main mentor: Gretchen Früh-Green, Dep. of Earth Sciences, ETH Zurich)
Kathrin Baumann (CM; 2017-2022; main mentor: Helmut Bürgmann, Eawag, CH)
Carla Perezmon (CM; 2017-2021; main mentor: Beat Frey, WSL, CH)
Johanna Donhauser (CM; 2017-2020; main mentor: Beat Frey, WSL, CH)
Bernhard Viehweger (CM; 2016-present; main mentor: Kai-Uwe Hinrichs; University of Bremen, D)
Joep van Dijk (CM; 2014-2018; together with Stefano Bernasconi, Dep. of Earth Sciences, ETH Zurich)

Master thesis committee member:

Julia Hunziker (2017; main mentor: Martin Schroth)

Student mentorship as a Graduate Student and Postdoctoral Scientist

Ph.D. students:

Andrea Torti (2011-2015; with Bo Barker Jørgensen, Aarhus University, DK; now high school teacher)
Xihan Chen (2010-2015; jointly with Bo Barker Jørgensen, Aarhus University, DK; now Staff Scientist, GLOBE Institute, University of Copenhagen)
Hyunsoo Na (2009-2013; jointly with Kasper Kjeldsen and Bo Barker Jørgensen, Aarhus University, DK; now Senior Research Associate at Berkeley Lab, Joint Genome Institute)

Masters thesis students:

Philip Eickenbusch (2013-14; University of Duisburg-Essen, D)
Lorenzo Lagostina (2011-12, University of Pavia, IT)

Bachelor students:

Søs Frandsen (2013-14, Aarhus University, DK)
Simon Jensen (2010-11, Aarhus University, DK)
Duke Cheston (2007, UNC Chapel Hill, USA)
Justin Blair (2006-08, UNC Chapel Hill, USA)
Melissa Novak (2001, Boston University, USA)

Visiting students:

Alex Michaud (PhD student, 2014; Montana State University, USA)
Jennifer Pastor (MSc student, 2014; University of Bremen, D)
Nadine Lehnen (MSc student, 2013; University of Bremen, D)
Laura Merit Piepgras (MSc student, 2012; University of Bremen, D)
Thomas Evans (BSc student, 2011-12; University of Bremen, D)
Daniela Kalhöfer (MSc student, 2005; University of Oldenburg, D)
Laura Wehrmann (MSc student, 2005; University of Oldenburg, D)

Leadership and Teaching Training

Leadership workshop "Leadership & Responsibility in Science – Program" by World Economic Forum Young Scientists, January 20, 2020.

Leadership workshop "Leadership for Innovation" by Human Resources, ETH Zurich, September 5, 2018.

Leadership workshop "Understanding three key fundamentals to achieving success!" by Mark Oliver, ETH Zurich, January 20, 2017.

Mindfulness and stress management workshop "Improve mindfulness, enhance resilience and manage stress" by Ruth Oliver, ETH Zurich, January 20, 2017.

Teaching course "Teacher training programme for assistant professors and postdocs", Centre for Teaching and Learning, Aarhus University Educational Development Network, DK, September-October, 2013.

Leadership workshop "Breakthrough II", Legacy Center, Morrisville, USA, October-November 2006.

Leadership workshop "Breakthrough I", Legacy Center, Morrisville, USA, September 2006.

Field Campaigns and International Experience

Chief Scientist of Texas Gulf Coast Research Center project "Hydrological and geochemical exchanges between bays and the coastal Gulf across Aransas Pass – a historical record related to human activities over the past century", RV Pelican Cruise offshore Aransas Pass, Gulf of Mexico, December 3-7, 2025 (*PI: Mark A. Lever; Co-PIs: Brett Baker, Kelly Dorgan, Kenneth Dunton, Sharon Herzka, Xinping Hu, and Zhanfei Liu*).

Co-PI of field campaign for Aarhus University Research Foundation grant "Is there methane production in the sea ice of the Arctic Ocean?". Sampling campaign to recover Arctic sea ice, seawater, and marine sediment from two locations near Nuuk, Greenland. April 2 to 11, 2024 (*PI: Lars C. Lund-Hansen; Co-PIs: Mark* A. *Lever, Søren Rysgaard, Dorte H. Søgaard, Brian Sorrell*).

Leader of coring campaign for General Land Office (GLO) project "Analysis of Sediment Transport in the Nueces and Corpus Christi Bays" (Prime Award No. 22-113-024-D388), June 18 to 23, 2023. (PI: Amir Hessami; Co-PI: Edward Buskey; my team performed Edward Buskey's designated contribution, after Dr. Buskey was appointed Director of the UT Marine Science Institute).

Shipbased participant on research cruise "Exploration of hydrothermal systems on the Azores Plateau, Central North Atlantic Ocean". RV Meteor cruise M186, November 29 (Lisbon, Portugal) to December 31, 2022 (Las Palmas, Spain) (*PI: Christopher Schmidt; Co-PIs Christian Hensen (all GEOMAR, D), Norbert Kaul (U Bremen, D), and Pedro Terrinha (IPMA, Lisbon, PT).*

Co-PI of Lake Rot deep coring campaign to investigate impact on past climatic and land use changes across the entire Holocene on the extant microbial community structure and microbial carbon cycle in sediments. Planned for September 29 to October 1, 2021. *Senior research associate Cindy de Jonge (Department of Earth Sciences, ETH Zurich) led the field campaign. This was the third field campaign of LEICAS.*

PI of field project to study controls on glacial-fed stream biofilm formation and metabolism, June 8-31, 2021. *My senior research associate Clemens Glombitza led the field campaign.*

Co-PI of International Continental Drilling Program proposal "Weihe Basin Drilling Project (WBDP): Cenozoic tectonic-monsoon interactions (Phase I)" (PI: Zhisheng An; Other Co-PIs: Peter Hale Molnar, Peizhen Zhang, John Dodson, Carmala Garzione, Hendrik Vogel, Youhong Sun), *proposal accepted*.

PI of field project to study controls on glacial-fed stream biofilm formation and metabolism, July 6-13, 2020. *I led the field campaign together with my senior research associate Clemens Glombitza.*

Participation in Oman Drilling Project (International Continental Drilling Program (ICDP) Project ICDP-2014/03; Lead-PI: Peter Kelemen) through NASA Astrobiology Institute "Rock Powered Life" (PI: Alexis Templeton), February 2020. *My postdoctoral scientist Caroline Scholze joined the field campaign.*

Shipbased participant in Gulf of Cadiz and Gloria Fault cruise on RV Meteor (M162), expedition scheduled for March 10-April 5, 2020 (*PIs: Christian Hensen, Pedro Terrinha, Joao Duarte, Norbert Kaul; Mark A. Lever was a co-proponent*). Clemens Glombitza, Jiaqi Li, and Silvan Arn from my group were onboard.

Co-Proponent of International Continental Drilling Program proposal "Trans-Amazon Drilling Project" (PI: Paul Baker; Co-PIs Sherilyn Fritz, Cleverson Silva, Andrea Marzoli), proposal approved, expedition scheduled for late 2019 or 2020, *but postponed due to funding problems*.

Co-PI of International Ocean Discovery Program expedition "Genesis of methane hydrate in coarse-grained systems: Northern Gulf of Mexico Slope" (IODP Proposal 887-CPP), *proposal accepted but expedition indefinitely postponed by IODP*.

PI of mesocosm experiments to simulate the effects of oligotrophication on microbial community structure, redox chemistry, and carbon cycling in sediments from the hypoxic deep basin of Lake Zurich (*in collaboration with Carsten Schubert from Eawag*, September-December 2019).

PI of Lake Cadagno Deep Coring Campaign to study geochemical controls on the microbial breakdown of terrestrial and lacustrine organic matter (in collaboration with Eawag, Department of Earth Sciences at ETH Zurich, University of Bern, University of Lausanne, and Australian National University; August 26-31, 2019). *This was the second field campaign of LEICAS.*

PI of field campaign investigating role of sediment macrofauna in controlling microbial carbon cycling in surface sediment, Friday Harbor Marine Laboratories, Friday Harbor, USA, July 6-September 9, 2017.

PI of field campaign investigating controls on microbial turnover of carbohydrates in anoxic marine sediments, Friday Harbor Marine Laboratories, Friday Harbor, USA, July 6-September 9, 2017.

PI of first field campaign investigating ***"Lake Eutrophication Impacts on Carbon Accumulation in Sediments (LEICAS)"***, in collaboration with Eawag, May-July 2016.

PI of field campaign investigating distribution and controls on microbial methane cycling in surface sediments of Swiss lakes (Lake Lucerne, Lake Zug, Lake Baldegg, Lake Zurich, and Lake Greifen) differing in trophic state, in collaboration with Eawag, May-July 2016.

Participation in International Ocean Discovery Program Expedition 370 "Temperature limit of the deep biosphere off Muroto" (principal investigators: Verena Heuer, Fumio Inagaki, Yuki Morono), September 10, 2017-November 23, 2017. *My doctoral student Lorenzo Lagostina was an onboard participant.*

Participation in International Ocean Discovery Program Expedition 366 "Mariana serpentinite mud volcanism: geochemical, tectonic, and biological processes" (principal investigators: Patricia Fryer, C. Geoffrey Wheat), December, 2016-February, 2017. *My doctoral student Philip Eickenbusch was an onboard participant.*

Shorebased participant on "Propagation of the Eurasia-Africa pLate boundary East of the Gloria Fault (PROPEL)", RV Sarmiento de Gamboa (principal investigator: Pedro Terrinha), October 15-25, 2016.

Shorebased participant on International Ocean Discovery Program Expedition 370 "Temperature limit of the deep biosphere off Muroto – deciphering factors that constrain the extent of the deep biosphere in a subduction zone" (principle investigators: Verena Heuer, Fumio Inagaki, Yuki Morono), September 10-November 10 2016.

Shipbased participant on "Magmatism-induced carbon escape from marine sediments as a climate driver – Guaymas Basin, Gulf of California (MAKS)" on RV Sonne (principal investigators: Christian Berndt, Christian Hensen), June 18-July24, 2015.

Shorebased participant of "Geomicrobiology of the Kattegat-Skagerrak seabed" (PI: Hans Røy) on RV AURORA, September 2014.

Shorebased participant on DARCSEAS II expedition with RV Poseidon in Western Mediterranean Sea (chief proponent: Kai-Uwe Hinrichs), April 2013.

Shipboard participant on Integrated Ocean Drilling Program Expedition 337, "Deep Coalbed Biosphere off Shimokita", originally scheduled for March 22-May 21, 2011, but postponed due to tsunami to mid July- mid September, 2012.

Shorebased participant on DV Chikyu drilling Expedition to Kumano Mud Volcano, July 2012. Shorebased participant in Integrated Ocean Drilling Program Expedition 327, "Juan de Fuca Hydrogeology", July 5-September 5, 2010.

Three-week **research visit** at Japanese Agency for Marine-Earth Sciences and Technology working with Fumio Inagaki in Kochi, Japan, June 2010.

Shipboard participant in research cruise AT15-40 to Guaymas Basin on RV Atlantis, November 22-December 6, 2009.

Shorebased participant in Integrated Ocean Drilling Program Expedition 323, "Bering Sea Paleooceanography", July 5-September 4, 2009.

Shipboard participant in Benguela Upwelling Area Cruise on RV Meteor, April 13-May 14, 2008.

Participant in NSF-East Asia and Pacific Summer Institute, Japan, at Japanese Agency for Marine-Earth Sciences and Technology working with Fumio Inagaki in Kochi, Japan, 2007.

Shipboard participant in NSF/OCE/ODP-cruise "Life in subseafloor sediments of the South Pacific Gyre", December 16, 2006 – January 27, 2007.

Shipboard participant in Integrated Ocean Drilling Program Expedition 301, "Juan de Fuca Ridge Hydrogeology", June 28-August 21, 2004.

Editorial work

Associate Editor, Biogeosciences (since November 2024).

Associate Editor, Frontiers in Extreme Microbiology (2012-present; handled >100 manuscript submissions).

Editorial Board Member, Progress in Earth and Planetary Science (since July 2017).

Editorial Board Member, Applied and Environmental Microbiology (January 2017-2022).

Editor of Special Issue in Frontiers in Microbiology *"Studies on Life at the Energetic Edge – from Laboratory Experiments to Field-Based Investigations, volume 2"* (2022; Guest Editors: Jan Amend (University of Southern California, USA), Tori Hoehler (NASA, USA), Bo Barker Jørgensen (Aarhus University, DK), and Victoria Orphan (Caltech, USA).

Editor of Special Issue in Frontiers in Microbiology *"Studies on Life at the Energetic Edge – from Laboratory Experiments to Field-Based Investigations"* (2017; Guest Editors: Jan Amend (University of Southern California, USA), Tori Hoehler (NASA, USA), Bo Barker Jørgensen (Aarhus University, DK).

Ad-hoc reviewer for (1) Science, (2) Science Advances, (3) Nature Communications, (4) Nature Microbiology, (5) PNAS, (6) ISME Journal, (7) ISME Communications, (8) Geology, and (alphabetically ordered):

(9) Applied Soil Ecology, (10) Archaea, (11) Annals of Microbiology, (12) Applied and Environmental Microbiology, (13) Applied Microbiology and Biotechnology, (14) Aquatic Microbial Ecology, (15) Aquatic Sciences, (16) Archives of Microbiology, (17) Biogeochemistry, (18) Biogeosciences, (19) Catena, (20) Communications Earth & Environment, (21) Ecology and Evolution, (22) Environmental Science and Pollution Research, (23) Environmental Science and Technology, (24) Environmental Microbiology, (25) Environmental Microbiology Reports, (26) Estuarine Coastal and Shelf Sciences, (27) FEMS Microbial Ecology, (28) Frontiers in Earth Science, (29) Frontiers in Environmental Science, (30) Frontiers in Marine Science, (31) Frontiers in Microbiology, (32) Geobiology, (33) Geochimica et Cosmochimica Acta, (34) Geomicrobiology Journal, (35) Journal of Environmental Sciences, (36) Journal of Geophysical Research: Biogeosciences, (37) Limnologica, (38) Limnology & Oceanography, (39) Limnology & Oceanography Letters, (40) Limnology & Oceanography Methods, (41) Marine Ecology Progress Series, (42) Marine

Environmental Research, (43) Marine Pollution Bulletin, (44) mBio, (45) Microbial Ecology, (46) Microbiology, (47) Molecular Ecology, (48) mSystems, (49) Nature Communications Earth and Environment, (50) NPJ Biofilms & Microbiomes, (51) Ocean-Land-Atmosphere Research, (52) Organic Geochemistry, (53) Peer J, (54) PLoS ONE, (55) Science of the Total Environment, (56) Scientific Drilling, (57) Scientific Reports, (58) Systematic and Applied Microbiology, and (59) Water.

Grant or expedition proposal reviewer for European Research Council (ERC, Brussels), National Science Foundation (NSF, USA), National Aeronautics and Space Administration (NASA, USA; Astrobiology and NSPIRES programs), German Research Foundation (DFG, D), Federal Ministry of Education and Research (BMBF, D), National Environment Research Council (NERC, UK), International Ocean Discovery Program (IODP), Center for Dark Energy Biosphere Investigations (C-DEBI, USA), Israel Science Foundation, Singapore National Research Foundation, Dutch Research Council (NWO), Netherlands Organization for Scientific Research Council for Earth and Life Sciences, Austrian Science Fund, Danish Research Council (DFF), The United States 0 Isreal Binational Agricultural Research and Development Fund (BARD), Bergen Research Foundation (Norway), Marsden Fund (New Zealand), Icelandic Research Fund (IRF), and Faroese Research Council (Faroe Islands).

Reader and review editor for Simon Mitton's popular science book "From Crust to Core: a chronicle of deep carbon science".

Review editor for textbook "Whole Earth Carbon" (eds. Orcutt BN, Daniel I, Dasgupta R).

Service

Academic community

Member of Review Panel, Pacific Northwest National Laboratory, Environmental Molecular Sciences Laboratory, 2026.

Tenure application reviewer (Woods Hole Oceanographic Institute; University of Nevada, Reno; University of Bergen; Shanghai Jiao Tong University).

Advisory Board Member, "Global Subseafloor Ecosystem and Sustainability" (GSES), Call for Decade Actions, 2021-2030 United Nations Decade of Ocean Science for Sustainable Development, since 2026.

Member of Scientific Organizing Committee, "International Conference to celebrate the 5th Anniversary of the International Center for Deep Life Investigations (IC-DLI)", Sanya, China, October 23-26, 2023.

Contributing author to "Geosciences roadmap for research infrastructures 2025-2028 by the Swiss Geosciences Community" (2021), published in Swiss academies communications (volume 16, p. 1-55).

Co-Convener of "International Workshop on microbial life under extreme energy limitation" (www.microenergy2020.org) with Bo Barker Jørgensen, Tori Hoehler, Victoria Orphan, and Jan Amend, Sandbjerg Castle, Denmark, September 5-9, 2022.

Awards Committee, "Deep Life Publication Highlights" and "SiYuan-Ocean Emerging Leader Awards of Deep Life", International Center for Deep Life Investigation (icdli.sjtu.edu.cn), Shanghai Jiao Tong University, China (annually since 2021).

Scientific Advisory Committee member, International Center for Deep Life Investigation (icdli.sjtu.edu.cn), Shanghai Jiao Tong University, China (since 2020).

Member of evaluation committee for "Tenure-track Researcher in Degradation of Micropollutants" at Aarhus University (Roskilde Campus), DK.

Member of Science Planning Committee for Deep Carbon 2019 conference, Washington DC, USA, October 24-26, 2019.

Co-Organizer of Deep Life Modeling and Visualization Workshop of the Deep Carbon Observatory's Deep Life Community, Louisiana University Marine Consortium, LA, USA, September 17-19, 2019.

Session convener "Controls on the microbial diagenesis of carbon compounds and the preservation of sedimentary carbon as archives of environmental change" together with Camille Thomas, Daniel Ariztegui (both CH), Patricia Roeser (F), and Monica Sanchez Roman, European Geophysical Union, Annual Meeting, Vienna, Austria, April 7-12, 2019.

Session convener "Celebrating 50 Years of International Ocean Drilling (1968-2018)" at 16th Swiss Geoscience Meeting, Bern, Switzerland, November 30-December 1, 2018.

Organizer and host of Deep Carbon Observatory's Executive Committee meeting at ETH Zurich, Zurich, Switzerland, October 11-12, 2018.

Session convener "Linking microbial communities and climatic archives: the influence of the subsurface biosphere on terrestrial and marine sediments" together with Camille Thomas, Daniel Ariztegui (both CH), Patricia Roeser (F), and Monica Sanchez Roman, European Geophysical Union, Annual Meeting, Vienna, Austria, April 8-13, 2018.

Co-Organizer of workshop of the Deep Carbon Observatory's Deep Life Community "Bioenergetics modeling and visualization" initiative at Arizona State University, Tempe, AZ, USA, March 18-20 2018.

Steering Committee Member, Deep Life Community of Deep Carbon Observatory, 2017-2019.

Organizer of workshop of the Deep Carbon Observatory's Deep Life Community "Bioenergetics modeling and visualization" initiative at Monte Verità, Ascona, Switzerland, March 14-17, 2016.

Core science member of Deep Carbon Observatory's Synthesis Group 2019 from 2016-2018 (Chair: Marie Edmonds). SG 2019 integrates Deep Carbon Observatory science between 2016 and 2019 in a series of outputs such as special issues, films, synthesis workshops, books, and synthesis activities including scientific review articles.

Chair (with Marshall Bowles and Everett Shock) of the Deep Carbon Observatory's Deep Life Community "Bioenergetics modeling and visualization" initiative, since May 2015.

Vice Chair of network "Impact of Fluid Circulation in old oceanic Lithosphere on the seismicity of transform-type plate boundaries: neW solutions for early seismic monitoring of major European Seismogenic zones", European Cooperation in Science and Technology (COST), 2014-18.

Work Group Leader in network, "Impact of Fluid Circulation in old oceanic Lithosphere on the seismicity of transform-type plate boundaries: neW solutions for early seismic monitoring of major European Seismogenic zones", European Cooperation in Science and Technology (COST), since 2013.

Session convener and chair "(Bio)geochemical cycling in extreme environments" together with Aude Picard, Brandon Briggs, and Eric Boyd (all USA) American Geophysical Union, Fall Meeting, San Francisco, USA, December 5-19, 2013.

Session convener and contact person for session "Deep biosphere research: presence, diversity and activity of microbes" together with Jennifer F. Biddle, Michael S. Rappé, and Jiasong Fang (all USA), American Geophysical Union, Fall Meeting, San Francisco, USA, December 9-13, 2013.

Session convener "The Deep Biosphere - Recent progress in life in the deep subsurface" together with Drs. Beth Orcutt, Brandi Kiel Reese, and Heath Mills (all USA). American Geophysical Union, Fall Meeting, San Francisco, USA, December 3-7, 2012.

Coordination and teaching of "Exercises in sequence analysis" together with Drs. Karen G. Lloyd and Jennifer F. Biddle at Dark Energy Biosphere Institute Research Coordination Network (DEBI-RCN) meetings "Deep Biosphere Sediment Microbiology", Chapel Hill, USA, March 6-9, 2011.

Invited participant at international conference "What makes a 'green' university in Vietnam – Defining Tri Viet University's Green Ambition", Ho Chi Minh City, Vietnam, December 3-4, 2011.

University of Texas at Austin

Member, Undergraduate Studies Executive Committee, Department of Marine Sciences (since fall 2025)

Assistant Undergraduate Advisor, Department of Marine Sciences (since fall 2025)

Chair, Marine Operations Committee, Department of Marine Sciences, since 2024.

Chair, Cafeteria Committee, Department of Marine Sciences, 2024-25.

Chair, "Strategic Planning 2024-29, Future Hires Committee", Department of Marine Sciences, 2024.

Review Committee member, **College of Natural Sciences**, "Catalyst Grant" applications, 2024.

Review Committee member, **College of Natural Sciences**, "Stengl-Wyer Postdoctoral Scholar" applications, 2024, 2025.

Host, Laura Randall Schweppe Endowed Lecturer, Department of Marine Sciences (Prof. John Anderson, Rice University, fall 2023; Anthony Rodriguez, University of North Carolina at Chapel Hill, spring 2025)

Member, **UT Austin's "Center for Planetary Systems Habitability"** (since 2023).

Assistant Graduate Student Advisor, Department of Marine Sciences (2022-25)

Acting Graduate Student Advisor, Department of Marine Sciences (fall 2024)

Member of professorial hiring committee, Department of Marine Sciences ("Abell Chair" (2022/23); Open Rank Cluster hire (3 positions; 2023/24)

Member of Departmental Seminar Series committee, Department of Marine Sciences (August 2022 through June 2024)

ETH Zurich

Co-PI on accepted proposal for *"ETH Centre for Origin and Prevalence of Life"*, together with PI Sascha Quanz (Department of Physics) and Co-PIs Julia Vorholt (Department of Biology) and Derek Vance (Department of Earth Sciences). This center is now headed by Nobel Prize awardee Dr. Didier Queloz.

Associated Faculty Member in Department of Biology at ETH Zurich (2016-22).

ETH Medal, member of evaluation committee, Dep. of Environ. Systems Science, ETH Zurich (2016-2021).

Participating PI, Life Science Graduate School, Microbiology and Immunology PhD program (since 2016).

Participating PI in Life Science Graduate School, Ecology PhD program (since 2014).

Doctoral thesis chair of:

André Felipe Lohn (September 21, 2020: main mentors: Angelika Hillbeck, Alex Widmer, both ETH Zurich).
Giulia Donati (February 25, 2020; main mentor: Loic Pellissier, ETH Zurich).
Benedict Borer (February 25, 2020; main mentor: Dani Or, Dep. of Environ. Systems Science, ETH Zurich).
Davide Ciccarese (February 14, 2020; main mentor: David Johnson, Eawag Dübendorf).
Magdalena Mayr (July 2, 2019; main mentor: Helmut Bürgmann, Eawag Kastanienbaum).
Caroline Davis (May 20, 2019; main mentors: Elisabeth Janssen, Kristopher McNeill, Eawag Dübendorf).
Rohini Athavale (April 30, 2018; main mentor: Bernhard Wehrli, Eawag Kastanienbaum).
Siul Ruiz (March 9, 2018; mentor: Dani Or, Dep. of Environmental Systems Science, ETH Zurich).
Flor Inés Arias Sánchez (March 15, 2018; mentor: Alex Hall, Dep. of Environ. Systems Science, ETH Zurich).
Sandra Probst (August 24, 2017; mentors: Martin Ackermann; Kristopher McNeill, Dep. of Environ. Systems Science, ETH Zurich).

Outreach & Publicity

(selected examples from myself and members of my group)

Public Lecture, Bay Education Day, Mission Aransas-National Estuarine Research Reserve, October 25, 2025.

Port Aransas South Jetty (2024):
(1) https://www.portasouthjetty.com/articles/sustainable-seaweed-farming-is-lecture-topic/
(2) https://www.portasouthjetty.com/articles/might-seaweed-be-the-next-texas-farm-crop/

Lecture & Lab Demo "Seaweeds & Sediments", Open Science Day, October 12, 2024.

Public Lecture, Public Lecture Series, Mission Aransas-National Estuarine Research Reserve, February 8, 2024.

Swiss Federal Institute of Aquatic Science and Technology (October 2020):
https://www.eawag.ch/en/news-agenda/news-portal/news-detail/bacteria-in-sediment-continue-to-show-effects-of-over-fertilisation/

ETH Zurich (June 2020):
https://usys.ethz.ch/en/news-events/news/archive/2020/06/burrowing-animals-control-communities-of-microorganisms-in-earths-biggest-carbon-sink.html

Mirage News (June 2020):
https://www.miragenews.com/burrowing-animals-control-communities-of-microorganisms-in-earth-s-biggest-carbon-sink/

National Geographic (April 2020):
https://www.nationalgeographic.com/science/2020/04/life-found-thriving-in-one-of-the-least-likely-spots-on-earth/

ETH Zurich (April 2020):
https://ethz.ch/en/news-and-events/eth-news/news/2020/04/innovating-together.html

Wikipedia page (2019):
https://en.wikipedia.org/wiki/Mark_A._Lever

Zürcher Oberländer (2019):
https://zueriost.ch/news/2019-04-16/oelige-pfuetzen-im-robenhauserriet

The Universe Today (2018):
https://www.universetoday.com/tag/deep-carbon-cycle/

World News (2017):
https://article.wn.com/view/2017/02/27/Microbial_community_assembly_and_evolution_in_subseafloor_se

Youtube (2012, 2017):
(1) Exploring the temperature limit of the deep biosphere off Muroto (2017; Lorenzo Lagostina): https://www.youtube.com/watch?v=7-WgYZVYYWQ
(2) Looking for life (2012): https://www.youtube.com/watch?v=0ehPpK2rc58

Tages-Anzeiger (2015):
http://www.tagesanzeiger.ch/wissen/natur/schwarze-schornsteine-tief-im-meer/story/12299975

Science (2013):
http://news.sciencemag.org/biology/2015/07/its-going-pluto-and-seeing-mcdonalds

Canadian Broadcasting Corporation (2013)

Victoria, Canada (April 3, 2013), live interview.

Wired (2013):
http://www.wired.com/wiredscience/2013/03/oceanic-crust-ecosystem/

Nature (2013):
http://www.nature.com/news/life-found-deep-under-the-sea-1.12610

Spiegel Online (2013):
http://www.spiegel.de/wissenschaft/natur/forscher-entdeckten-mikroorganismen- tief-in-der-ozeanischen-erdkruste-a-888635.html

LiveScience (2013):
http://www.livescience.com/27899-ocean-subsurface-ecosystem-found.html

Scientific American (2013):
http://www.scientificamerican.com/article.cfm?id=life-found-deep-inside- earths-oceanic-crust

Smithsonian (2013):
http://blogs.smithsonianmag.com/science/2013/03/microbes-buried-deep-in-ocean- crust-may-form-worlds-largest-ecosystem/

Deutschlandfunk (2013):
http://www.dradio.de/dlf/sendungen/forschak/2042794/

Huffington Post (2013):
(1) http://www.huffingtonpost.com/2013/03/15/microbial-life-sea- floor_n_2878696.html
(2) http://www.huffingtonpost.com/2012/09/06/deep-drilling-record-broken-japanese-vessel-chikyu_n_1862242.html

IODP (2012):
http://www.iodp.org/drilling-depth-record-of-scientific-drilling

Science Daily:
(1) http://www.sciencedaily.com/releases/2013/03/130314144340.htm
(2) http://www.sciencedaily.com/releases/2012/09/120906112255.htm

Wired (2012):
http://www.wired.com/2012/11/a-new-milestone-in-the-pursuit-of-deep-life/